VETERANS HEALTH ADMINISTRATION

YEAR 2000 COMPLIANCE PLAN

Version 1.3
April 30, 1998

Prepared by:

VHA Year 2000 Project Office

TABLE OF CONTENTS

APPENDICES (to be included as available):

EXECUTIVE SUMMARY

In the Department of Veterans Affairs (VA), the Veterans Health Administration (VHA) operates the largest civilian health care system in the United States. Within its national network of health care facilities, VHA manages and maintains a diverse systems and equipment inventory. This includes hospital information systems and applications, corporate information systems and databases, commercial off-the-shelf (COTS) hardware and software, communications systems and networks, biomedical equipment, laboratory and research systems, and other computer-controlled facility equipment. There are many data interfaces among the systems and equipment in this extensive inventory. At the core of VHA's systems environment is the Veterans Health Information Systems and Technology Architecture (**V***IST***A**). **V***IST***A** is a critical element of the total systems environment that provides information management support to VHA health care facilities, and is continually being developed and enhanced.

One of VHA's top priorities is Year 2000 date compliance for all its system products and their interfaces. The extent of the Year 2000 problem and its potential impacts throughout VHA varies in scope, complexity, and approach among the categories of system products. Headquarters and field personnel with responsibility for management of these system products are fully aware of Year 2000 issues and will need to be continually informed and guided as a compliance approach is implemented. Each product category must be analyzed carefully; a structured compliance plan laid out; roles and responsibilities assigned; performance tracking and reporting mechanisms put in place; and implementation resources identified and scheduled. Toward that objective, the VHA Chief Information Officer's (CIO) Year 2000 Project Office has prepared this compliance plan, which is organized in accordance with the General Accounting Office (GAO) guidelines on the Year 2000 compliance process. In the plan, key responsibilities are assigned to the VHA CIO and Associate CIOs, the Veterans Integrated Service Network (VISN) CIOs, and VA health care facility management. The Year 2000 Project Office will provide planning, guidance, oversight, and technical support. The 22 VISN CIOs have the ultimate responsibility to develop and execute Year 2000 compliance plans within their networks.

The major elements of the VHA Year 2000 Compliance Plan include:

- A master schedule for Year 2000 compliance, and the tools necessary to provide overall project management and status tracking.

  Assessment for mission-critical systems has been completed. Renovation will be completed by July 1998, validation/testing by January 1999, and implementation by March 1999. The VHA Year 2000 Intranet web site (http://vaww.va.gov/Year2000) is being utilized to track and display compliance status through all phases of the project.

- A schedule of conversion/replacement and assignment of priority for major information system applications and other critical VHA system products.

  V*IST***A** *information system applications have been categorized (Level I, II, or III) according to their criticality to the VA's mission. Year 2000 compliance activities for Class I VISTA applications have been scheduled and assigned by the Program Manager for Quality Assurance, Technical Services. Corporate systems have been inventoried and were assessed by the responsible system manager. As of this update, more than 90% of 152* **V***IST***A** *applications and 138 Corporate Systems have been renovated. Other VHA system products are being inventoried, analyzed, prioritized, and scheduled for renovation by the Project Office, in coordination with the cognizant field activity. The Project Office recognizes that different product categories may require different compliance approaches, and the plan reflects this understanding. Assessment progress for all VHA system products was reported to OMB on January 30, 1998 in the VHA Year 2000 Assessment Phase Report.*

- Quality assurance and performance measurement and reporting mechanisms, including the methodology and formats to meet Congressional, Office of Management and Budget (OMB), and VA reporting requirements.

  The Project Office has provided guidance and reporting format requirements to the VISN CIOs so that they can generate consistent monthly statistics on compliance performance. Performance measurement will be completed for all categories of system products. Performance measures may include: percentage of activities completed in a specific phase; percentage of system products in a particular category that have been rewritten, repaired, replaced, or retired; percentage of system products in a particular category that have been certified as compliant; and percentage of interfaces repaired or certified compliant. Progress will be reported to various Federal oversight organizations. In support of this activity, the Project Office's VHA Year 2000 Intranet page (http://vaww.va.gov/Year2000) will be used to post compliance progress and increase awareness among responsible VHA personnel and organizations.

- Detailed objectives, organizational responsibilities, description and scheduling of principal activities, and cost monitoring for each of the five phases of Year 2000 compliance.

  The plan addresses the objectives and expected outcomes of activities required in each phase of the compliance process, according to the GAO guidelines for compliance (awareness, assessment, renovation, validation/testing, and implementation). In addition to each VISN CIO's primary responsibility for individual plan preparation and execution in his/her respective network, the responsibilities of other organizations are defined in the plan. The Project Office has developed a series of guidance documents and compliance checklists for the categories of system products and has provided this information to the VISNs and other field organizations. As of this update, all 22 VISNs have prepared compliance plans.

- A description and approach to legal, liability, contractual, product certification, product warranty, guarantees, and other related management/policy issues.

  In parallel with planning and execution of compliance activities, the Project Office is investigating and analyzing other issues related to liability (both agency and vendor/manufacturer), effects of software licensing and maintenance agreements, software ownership, the need for compliance warranties, vendor disclosure requirements, and a range of other policy matters. Also being investigated are the legal implications of publishing or providing compliance data collected by VHA to other Federal or external organizations.

- A mechanism to feed back the results of assessment, renovation, testing, and implementation to ongoing Year 2000 compliance efforts, and to effect changes in the compliance approach as required.

  The Project Office is using several methods to feed back the outcomes of various activities to field personnel. These include the Intranet web site, electronic mail, paper copies of relevant documents, site visits, and regularly scheduled teleconference calls. This is recognized as critical to the project's overall success. In addition, the VHA Year 2000 Assessment Phase Report was prepared for OMB and disseminated to the field, and regular updates to this plan are being generated.

- The development of a VHA Year 2000 Intranet/Internet web site as a repository and means for sharing project information, status, results, coordination, and links to other Year 2000 sites.

  The Project Office is maintaining and refining an Intranet page to disseminate and share Year 2000 information with field organizations and to support the need for a feedback and discussion mechanism.

The following table summarizes the compliance status of the eight categories of VHA system products.

COMPLIANCE STATUS SUMMARY - 4/30/1998

Product Category	Overall Status of Compliance Approach
V*IST*A	A Y2K MUMPS (M) code assessment tool (RE2000) has been applied to all Class I **V*IST*A** applications. The results were assigned to development teams for manual assessment which was completed by January 30, 1998. To date, renovation work on Class I applications is 97% complete.
Corporate Systems	Assessment was completed by January 30, 1998, as scheduled. The cost of Corporate Systems renovation is estimated at $373,000. As of this update, 10 systems need to be re-coded and 2 systems need to be replaced. Overall, renovation is more than 90% completed.
Local Software Applications	IRM field units at the VA health care facilities have completed more than 75% of local software assessment using the RE/2000 tool. Less than 15% of more than 64,000 programs in the local software inventory will require renovation work at an estimated cost of $756,000.
Databases/Archives	The Chief R&D Officer has conducted a survey of all medical research facilities for which databases and archived research data are a critical concern. The results of the survey were due on October 31, 1997.
COTS Software	More than 3,000 software products from more than 1,000 vendors have been identified in the VHA inventory. Letters have been mailed to more than 500 vendors to determine compliance status and plans. Additional letters will be mailed as additional vendor names and addresses are verified. Compliance data will be posted on the Intranet web site. Manufacturers' Web sites also are being referenced as sources of compliance information.
Computers & Communications	A VA Telecommunications Integrated Product Team (TIPT) has been formed. Telecommunications Support Service has conducted a field survey of voice systems. Data has been provided to GSA for inclusion on their Federal government-wide Internet web site. Access to the web site is being obtained for all VHA field facilities. In the January 30, 1998 assessment report, VHA reported more than 95,000 desktop platforms currently in use. PC and other COTS hardware Y2K issues are being addressed in coordination with the ACIOs and Chief Officers who have responsibility for other VHA facilities.
Medical Devices	A VHA Medical Devices Integrated Product Team (MDIPT) has been formed. A comprehensive manufacturer database was created and compliance status letters mailed to more than 1,600 manufacturers. Through mergers and buy-outs, the number of manufacturers has been reduced to approximately 1,500. To date, there has been a 69% response rate. Thirty-four manufacturers have reported 188 non-compliant products that are no longer supported. Ninety-four manufacturers have reported 655 products that are not compliant but will be repaired or updated in 1998. Compliance data is being posted to the Intranet web site and updated on a weekly basis.
Facility Systems	A VHA Facility Systems Integrated Product Team (FIPT) has been formed. Compliance status letters have been mailed to more than 250 system manufacturers. The FIPT will review and add to the list of manufacturers and facility system products requiring assessment. Compliance status of facility system products also is being sought on Web sites. Thus far, the Project Office has retrieved information on 156 manufacturers' products. Compliance data is

Product Category	Overall Status of Compliance Approach
	being posted to the Intranet web site.

This plan is intended to be a "living" document that will be revised on a quarterly basis to take advantage of lessons learned and to implement the best compliance practices in VHA. In that regard, we invite you to share your comments, criticisms, and concerns with the Year 2000 Project Office. This plan will serve as a yardstick to measure overall VHA Year 2000 compliance progress.

1 INTRODUCTION

1.1 Background

The delivery of quality health care services to eligible veterans is a primary mission of the Department of Veterans Affairs. Within the VA, the Veterans Health Administration operates the largest centrally-directed civilian health care system in the United States. A wide range of electronic information systems, biomedical equipment, facilities systems, and other computer-based system products provide vital support to the delivery of health care to veterans within 22 Veterans Integrated Service Networks. These 22 health care service networks encompass 173 VA medical centers (VAMCs), 376 outpatient clinics, 133 nursing homes, and 39 domiciliaries. It is essential that these health care networks thoroughly assess and plan for Year 2000 compliance so that service delivery is not impacted.

1.1.1 The Year 2000 date compliance problem within VHA

For purposes of this compliance plan, the definition of Year 2000 compliance is taken from the Federal Acquisition Regulation (FAR) Part 39.002. "Year 2000 compliant, as used in this part, means with respect to information technology, that the information technology accurately processes date/time data (including, but not limited to calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap-year calculations to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time data with it." Year 2000 date compliance issues may exist in any of the computer-based systems at VHA facilities.

Dates are a critical element in computer systems processing. In general, most dates programmed in computers are based on a two-digit year field: for instance, "97" rather than "1997." The high cost of data storage in the early days of computing is the primary reason why a two-digit rather than four-digit year field has been the norm among system developers. The current potential problem stems from the fact that when the Year 2000 is entered as "00", systems may not recognize it as the correct year and programs may fail, reject legitimate year entries, or yield erroneous results. The problem affects computations that calculate age, sort by date, compare dates or perform other specialized date-related tasks. The problem can affect mainframe, mid-range and personal computers alike. The two-digit year field can be found in microcode, operating systems, software compilers, applications, queries, procedures, screens, databases, and data.

VHA's **V***IST***A** application development requirements in effect since 1984 dictate a standard method of storing and deriving date information through the use of a pre-existing database management system known as VA File Manager. VA File Manager uses a seven digit date field that has three digits for the year (rather than the common two digit year field in most legacy systems) and two digits each for the month and day (date format is YYYMMDD). The year is specified according to the number of years from the year 1700. Because of the decision to use the VA File Manager date standard, the core VHA application systems are expected, but not yet confirmed, to be able to support date information through the year 2699. This approach should have eliminated most of the two versus four digit year issues for the majority of software applications at VHA medical facilities. The databases used by and linked to these applications, interfaces between these applications and other systems and equipment, and other system products that do not use the VA File Manager date format, must be carefully assessed for Year 2000 compliance.

1.1.2 VHA system products

The term "VHA system products" is used in this plan to include a wide range of computer and communication systems, personal computers, networks, servers, operating systems, software development systems, and computer-controlled equipment such as biomedical equipment, security access devices, phone systems, office automation equipment, and elevators. In order to analyze potential Year 2000 impacts, ensure coverage of all affected VHA systems, and prepare plans tailored to specific classes of products, the following categories have been developed and will be modified as needed:

1.1.2.1 **V*IST*A software applications** - The Veterans Health Information Systems and Technology Architecture (**V*IST*A**) is the heart of the medical facilities information resource management activities. The core **V*IST*A** modules are developed in the MUMPS programming language (Massachusetts General Hospital Utility Multi-Programming System, now known as M), and are maintained and distributed nationally. Developers write and maintain these applications using a defined set of M programming tools, operating system environments, and documentation guidelines. **V*IST*A** includes workstations and personal computers with graphical user interfaces (GUI) and local software developed by VHA employees. It encompasses the links that allow commercial-off-the-shelf (COTS) software and products, such as office automation, Internet browsers, intensive care and telemedicine systems, to be used with existing and future technologies. It also interfaces to many types of biomedical devices. As such, **V*IST*A** is a vital part of the total computer systems environment that provides information resources and support at VHA health care facilities.

1.1.2.2 **Local software applications** - Many special purpose programs have been developed in VHA. These have been written by local Information Resource Management (IRM) staff or other system users on-site, or have been imported from other VAMCs. They generally meet a local need or extend the functionality of nationally released software. These software applications are more likely to be non-compliant for Year 2000, but probably have fewer users and potentially less mission and financial impact.

1.1.2.3 **VHA corporate systems** - The corporate systems inventory was intended to gather pertinent information needed by the VHA CIO to support technical and data modeling efforts for VHA, and provide an overall view of existing systems and databases. These systems and databases involve a wider range of programming languages (including OS/VS COBOL, COBOL II, and ALC) than the **V*IST*A** application suite. VHA defines corporate systems as applications that gather information from one or more field facilities, and the supported database(s). An example would be the National Mental Health Database System, which runs on a PC at the Pittsburgh (Highland Drive) medical center. It is updated weekly by 97 Substance Abuse programs and 73 Post-Traumatic Stress Disorder (PTSD) programs that are located at 120 medical centers, and is used for performance measurement purposes. Responsibility for Year 2000 compliance of VHA corporate systems will be coordinated with the appropriate program offices.

1.1.2.4 **COTS software** - There are many COTS software packages in use at VHA facilities. These include various versions of PC operating systems, office automation products, communications software, desktop publishing software, and project management software. There are also clinical software packages for such applications as Intensive Care Unit monitoring or nurse scheduling. In addition, there are server operating systems and utilities, Internet services packages, network management tools, database and software development environment tools, and operating systems utilities.

1.1.2.5 **Databases and data archives** - There may be as many database files as there are application programs in the VHA inventory. Today's relational database structures encourage large numbers of interrelated files. If any file has a two digit year field, then it will have to be thoroughly assessed. If one database must be changed to be made Year 2000 compliant, then databases and programs linked to it may also need to be changed. Data archives might have to be converted if the databases to which they refer are upgraded for Year 2000 compliance. Each facility is encouraged to conduct an inventory of all local databases to ensure compliance. An inventory of Research & Development field offices, including research databases, is being conducted.

1.1.2.6 **Computer and communications hardware** - In addition to personal computers on employees' desks, there are servers for printer and file sharing, automated phone systems, voice mail and fax back services, computers for electronic mail, computers in fax machines and in network hubs and switches, and computers that monitor system activity. These systems are often highly interlinked and interdependent.

1.1.2.7 **Biomedical equipment** - Biomedical equipment includes a wide range of devices that record, process, analyze, display, and transmit medical data. Some examples include computerized nuclear magnetic resonance imaging (MRI) systems, cardiac monitoring systems, tissue and gas analyzers, cardiac defibrillators, and various laboratory analyzers. Some devices interface and exchange data with **V***IST***A** application systems and other VHA system products. Medical devices in medical research facilities are being inventoried and assessed for Year 2000 compliance. The Project Office has contacted approximately 1,600 manufacturers of medical devices that supply devices to VHA. Devices that are not compliant are being posted on the VHA Year 2000 Web page on a weekly basis. Year 2000 compliance for biomedical equipment and systems is a high priority for the administration.

1.1.2.8 **Facilities-related systems and equipment** - Facilities-related system products are vitally important to VHA in providing quality health care service. These include elevators; heating, ventilating, and air conditioning (HVAC) equipment; lighting systems; security systems and disaster recovery systems. Involvement of engineering, information resources, facilities management, acquisition, and administrative personnel at all VHA sites will be necessary to assure that facility-related equipment is confirmed to be Year 2000 compliant.

Another critical aspect of achieving Year 2000 compliance across these product categories is the consideration of data interfaces between systems within a product category, between systems in different product categories, and between VHA systems and organizations/systems outside VHA. In the development of this plan, the term "data interfaces" refers primarily to the exchange formats between systems sharing data containing date-sensitive fields. Year 2000 compliance cannot be certified until data interfaces have been identified, analyzed, tested, and implemented successfully.

1.1.3 Overview of VHA information system plans

Formulation of this compliance plan takes into account the dynamic nature of the VHA information systems environment. Improvements to the existing software applications and hardware inventory are continually occurring as new technologies are incorporated. Year 2000 compliance must be assured as changes are made to all components of the information environment. Therefore, the procedures for assuring Year 2000 compliance will be applied to applications being modified, new applications under development, and COTS software and hardware being acquired. For existing and planned information technology initiatives, Year 2000 compliance will be addressed, at a minimum, in the following areas:

- Hybrid Open Systems Technology (HOST)
- DoD Sharing
- Internet and Intranet developments
- **V*IST*A** evolution
- Clinical Information Resource Network (CIRN)
- Ambulatory Care Data Capture
- Capacity Management
- Administrative Operations
- Customer Support
- Decision Support System (DSS)
- Telecommunications Infrastructure Project (TIP)
- Training

Other areas will be identified and Year 2000 compliance considerations addressed as the project progresses.

1.1.4 Year 2000 project work completed by VHA

The VHA Project Office has completed the first steps in the ongoing awareness phase of the Year 2000 compliance process. Roles and responsibilities for the project have been assigned and partnerships with Federal agencies have been formed. The Project Office has responded to the readiness review conducted by the Assistant Secretary for Management. The Associate CIOs and 22 VISN CIOs are fully integrated into the overall compliance effort. VISN CIOs continue to be a focus of Year 2000 awareness activities through their participation with the Project Office in VISN CIO meetings, conference calls, mailings, and electronic mail work groups.

The following is a summary of assessment phase status, by system product category (additional detail can be found in section 2.5.3):

- The **V*IST*A** applications inventory has been completed. The entire Class I application suite has been processed (four times) through a MUMPS Year 2000 assessment tool (RE2000).Individual development teams have completed manual assessments on all Class I applications. Renovation work is 97% complete on Class I applications. Implementation work is scheduled to be complete by July 31, 1998.
- Health care facilities are compiling individual inventories of locally developed software applications. The RE2000 tool along with installation instructions and the **V*IST*A** Year 2000 Guidelines Specific to Class III Software Assessments document were provided to local facilities in December 1997 for assessing Class III software applications. Training and guidance on the tool was provided for facility personnel through the Bay Pines CIO Field Office.
- The VHA Corporate Systems inventory has been assessed for Year 2000 compliance. As of this update, 10 of the 138 Corporate Systems are being recoded and 2 are being replaced to achieve Year 2000 compliance. Two Corporate Systems have been renovated, validated, and implemented and compliant versions are now in production.
- A COTS Software inventory has been completed. Based on the data received from the 22 VISNs and their health care facilities, VHA is contacting COTS software vendors/manufacturers to determine compliance status and vendor plans. VHA is also participating in the CIO Council Subcommittee Subgroup on COTS Products to obtain compliance information. Thus far, more than 500 compliance status letters have been mailed to COTS software vendors; more than 250

vendors have responded. Status information will be posted on the Intranet web site as it is received. Manufacturers' Web sites also are being referenced as sources of compliance information, including the new Microsoft site which was established on April 15, 1998.

- A COTS Computer Hardware inventory has been completed. VHA is making considerable progress in inventorying and analyzing Year 2000 compliance issues for its computer and telecommunications systems inventory. VHA Telecommunications Support Service has conducted a field survey of voice systems. Data has been provided to GSA for inclusion on their Federal government-wide Internet web site. Instructions for access to the web site have been sent to all VHA field facilities. In addition, PC and other COTS hardware Y2K issues are being addressed in coordination with the ACIO for Customer Service.
- A Biomedical Equipment plan for Year 2000 compliance has been developed. A VHA Medical Devices Integrated Product Team (MDIPT) has been formed. A comprehensive manufacturer database has been created and compliance status letters mailed. To date, more than 1,600 major biomedical equipment manufacturers have been contacted, and there has been a 69% response rate. To date, we have identified 188 non-compliant medical devices. Compliance data is being posted to the Intranet web site and updated on a weekly basis.
- An inventory and plan have been developed for achieving compliance in the area of Facilities-related Systems and Equipment. A VHA Facility Systems Integrated Product Team (FIPT) has been formed. Compliance status letters have been mailed to more than 250 system manufacturers. The FIPT will review and add to the list of manufacturers and facility system products requiring assessment. VHA is also participating in the CIO Council Subcommittee Subgroup on Building Systems to obtain compliance information.
- The Chief R&D Officer has conducted a survey of all medical research facilities, for which databases and archived research data are a critical concern. The results of the survey were due on October 31, 1997.

1.2 **Organizational Structure for Plan Execution**

VHA is a highly decentralized, geographically dispersed, complex enterprise with a vast systems, equipment, and facilities inventory that is potentially impacted by Year 2000 issues. As such, we recognize that our Year 2000 compliance effort is a challenging exercise in project management and coordination. The formation of an organizational structure, assignments of roles and responsibilities, and establishment of clear lines of authority, reporting, and communication are essential elements for successful project management.

There are many organizational elements in VHA vested with responsibility for executing the Year 2000 Compliance Plan. The VHA Chief Information Officer (CIO) has overall responsibility for planning and managing Year 2000 compliance within VHA. The 22 VISN CIOs, medical facility directors and managers, and other field personnel have ultimate responsibility for preparing and executing their individual Year 2000 plans, including all required assessment, renovation, validation/testing, and implementation activities.

1.2.1 **Role of VHA Year 2000 Project Office**

In recognizing the importance of this project, the VHA Under Secretary for Health has designated the VHA Chief Information Office as the executive agent for formulating and managing the Year 2000 compliance project. R. David Albinson, Chief Information Officer (19), and Nancy Wilck, his Executive Assistant, have created the VHA Year 2000 Project Office, which is empowered to develop guidance regarding Year 2000 compliance. Leonard R. Bourget, Director, IT Policy and Planning Staff (19A), is the VHA Year 2000 Project Manager. The VHA Year 2000 Project Office has the overall responsibility for: developing an administration-wide plan in accordance with Federal guidelines; managing the VHA's

Year 2000 compliance effort to ensure continuing quality service to veterans; promoting the exchange of information among the VISN CIOs, the vendor community, and national development and procurement offices; and tracking and reporting activities to senior VHA and VA management, the Office of Management and Budget (OMB), the General Accounting Office (GAO), and Congress.

Shawn Hurford (19A) is the Year 2000 Project Coordinator. The Project Coordinator centrally coordinates the VHA Year 2000 effort. Sub-projects will be executed by staff at VA Headquarters (HQ) and VHA CIO field offices, network offices and medical facilities. The Project Coordinator is responsible for the development and maintenance of the project plan; monitoring project resources; and for successful completion of the project. The Project Coordinator oversees and coordinates all milestone activities. The Project Coordinator ensures that potential Year 2000 compliance issues are addressed within all areas of VHA. This effort encompasses the areas of biomedical equipment, facilities management, and others as they are identified, in addition to the entire information technology area. The Project Coordinator facilitates the creation of an information clearinghouse as one of the primary functions of the Project Office. The Project Coordinator serves as the VHA POC (point of contact) for tracking, monitoring and reporting VHA's Year 2000 activities to VHA and VA offices, other Federal agencies, such as OMB and GAO, and Congress. The Project Coordinator serves as the POC between the VHA Year 2000 Project Office and VHA's 22 VISN directors and CIOs. The Project Coordinator is the Contracting Officer's Technical Representative (COTR) for designated efforts, specifically those associated with Project Office contractual support.

1.2.2 **Role of other VHA CIO organizational elements**

Other VHA CIO organizational elements are responsible for supporting plan execution and for contributing technical support and analyses for various elements of the Year 2000 compliance effort. Within the Associate CIO for Technical Service (192), the TS Quality Assurance office (192-1B) is tasked with assessing Year 2000 issues within the **V***IST***A** Class I (nationally released) application inventory and for taking the necessary steps to formulate, implement, and track a Year 2000 compliance approach for those software applications and associated interfaces. The Program Manager for Quality Assurance, Technical Services, is responsible for coordinating software assessment, conversion, and testing operations for all Class I nationally released **V***IST***A** applications. In addition, that office is responsible for Year 2000 compliance certification of all **V***IST***A** Class I nationally released applications. The Program Manager for Quality Assurance, Technical Services, is also responsible for coordinating activities and assignments among others within the Associate CIO for Technical Service. The QA program manager will provide planning and implementation guidance to all VHA field facilities.

Other Associate CIOs [Business Enterprise Solutions & Technologies (191), Customer Service (193), and Implementation & Training Services (194)] have responsibilities for supporting plan formulation and execution. The CIO field offices (CIOFOs, formerly called IRMFOs) have the responsibility to support major IRM field activities, including Year 2000 compliance. In addition, the VA HOST Program Office (19H) and the IRM Acquisition Analysis and Effectiveness Staff (19B) are providing support.

1.2.3 **Role of VISN CIOs**

The Veterans Integrated Service Network (VISN) structure organizes the VHA's medical centers and related health care facilities into 22 regional areas, with each VISN CIO vested with responsibility for maximizing the quality of patient care through information technology. VISN CIOs are responsible for health care information systems initiatives and have the primary responsibility for Year 2000 compliance activities in their respective network. Each VISN CIO has the responsibility to complete a system products inventory, develop a VISN Year 2000 Compliance Plan specific to that network, execute the Plan within their area of responsibility, and to report Plan progress to the VHA Project Office in

accordance with the reporting and performance tracking mechanisms described below. VISN CIOs are ultimately responsible for achieving Year 2000 compliance for all system products in their network.

1.2.4 Role of VA health care facilities management

VHA health care facilities will have proximate hands-on responsibility to ensure that Year 2000 compliance efforts are fully implemented at the field level. Because Year 2000 compliance encompasses a wide range of VHA system products and interfaces between those products, it is imperative that units such as Acquisition and Materiel Management, Engineering and Facilities Management, Information Resource Management, Pathology and Laboratory Medicine, Medical, Quality Assurance, and Radiology become intimately involved in the planning, execution, and performance tracking of compliance activities. In coordination with VISN CIOs, health care facility managers will implement compliance activities through all phases of the Year 2000 effort.

1.2.5 Other VHA organizational responsibilities

Each of VHA's Chief Officers (such as Chief Network Officer, Chief Financial Officer, etc.) is responsible for supporting the plan execution. They will accomplish this by providing oversight, guidance, review, and pertinent analyses.

The Chief Officers and their staff in VHA Headquarters provide policy guidance and oversight for the delivery of quality health care to veterans. Each Chief Officer must ensure guidance for all activities in their area of responsibility, with appropriate contingency plans in place, covering potential systems or equipment failure. The Chief Officers will assist in assuring Year 2000 compliance at VHA field locations such as the Health Administration Center, Health Eligibility Center, Allocation Resource Center, St. Louis Educational Center, and others. Chief Officers will facilitate information sharing on national conference calls, and assist in other assessment activities when requested.

The Chief Research & Development Officer is responsible for managing and guiding a comprehensive survey of system products, including research databases, located throughout the Research & Development Field Offices.

1.2.6 Other VA organizational responsibilities

VHA is one organizational element in the Department of Veterans Affairs overall Year 2000 compliance project. VHA must work closely with the Assistant Secretary for Management, the Veterans Benefits Administration (VBA), the Austin Automation Center (AAC), and other VA organizations who have similar requirements and ongoing initiatives so that the Deputy Secretary, as Chief Operating Officer, can report efficiently and effectively on overall Plan progress within the Department. VA-wide management and coordination of Year 2000 compliance is the responsibility of the VA Chief Information Office, under the direction of Mark Catlett. Other VA organizations with pertinent involvement include General Counsel, Office of Acquisition and Materiel Management, and National Acquisition Center.

1.2.7 Interfaces with other Federal organizations

1.2.7.1 **Department of Defense -** VHA is working closely with the Office of the Assistant Secretary of Defense for Health Affairs (OASD-HA) in order to optimize the sharing of information and execution within the compliance project effort. A VHA and OASD-HA working group meets monthly to coordinate activities in such areas as clinical systems and biomedical equipment issues; verification, interface, and testing issues; data sharing efforts; joint venture sites; communications; and other compliance policy issues.

1.2.7.2 **Health and Human Services** - VHA is also working closely with the National Institutes of Health (NIH), Centers for Disease Control (CDC), and Food & Drug Administration (FDA) within the Department of Health and Human Services (HHS), who share common Year 2000 problems in the areas of biomedical and clinical equipment and laboratory facilities. An interagency working group is being formed to share information and minimize duplication of effort in addressing Year 2000 impacts in these critical areas.

1.2.7.3 **General Services Administration, Office of Government-wide Policy** - VHA is also participating on several subgroups sponsored by the General Services Administration (GSA) and the CIO Council Subcommittee on the Year 2000. These subgroups are currently addressing such Federal government-wide Year 2000 concerns as telecommunications, facility-related systems, embedded computers, and COTS software. GSA is developing databases of various product categories and will post this data on the Internet.

1.3 Year 2000 Compliance Project Funding

Separate funding has not been assigned in the 1997 and 1998 Congressional budgets for Year 2000 compliance activities. Funding required for the project will be taken from current funds through reassignments of staff, equipment, and dollars as needed.

Cost estimates for the Year 2000 compliance activities in VHA were prepared and submitted to the Assistant Secretary for Management for inclusion in an agency report to the Office of Management and Budget (Appendix C). The estimates were based on early information pertinent to the technology community in general. VHA-specific cost estimates will utilize additional information being gathered in the inventory of at-risk systems throughout VHA health care facilities. The early estimates were based on a variety of reasonable assumptions, including the following:

- Hardware and software costs will be concentrated in the medical facilities and consist of estimated costs to achieve Year 2000 compliance above and beyond normal upgrades and purchasing schedules.
- Staff costs occur primarily during the extensive assessment and renovation phases - 1997 and 1998. Every facility will be affected, and multiple systems within each facility will be affected. A minimum of 1.5 full-time equivalent employees (FTEE) per facility was estimated.
- VISN CIOs, CIOFOs, and HQ may acquire contract support for this project.
- Travel is based on one trip from half of the VAMCs, one from each VISN, three per CIOFO, and 22 from headquarters, for training purposes and project coordination.
- Training includes conferences and special courses, particularly for project management, and specialized Year 2000 conferences.
- Three satellite up-links were planned for system-wide awareness and coordination.
- Costs for biomedical and facilities-related equipment were not originally estimated because there were no biomedical or other equipment surveys/inventories upon which to base estimates.

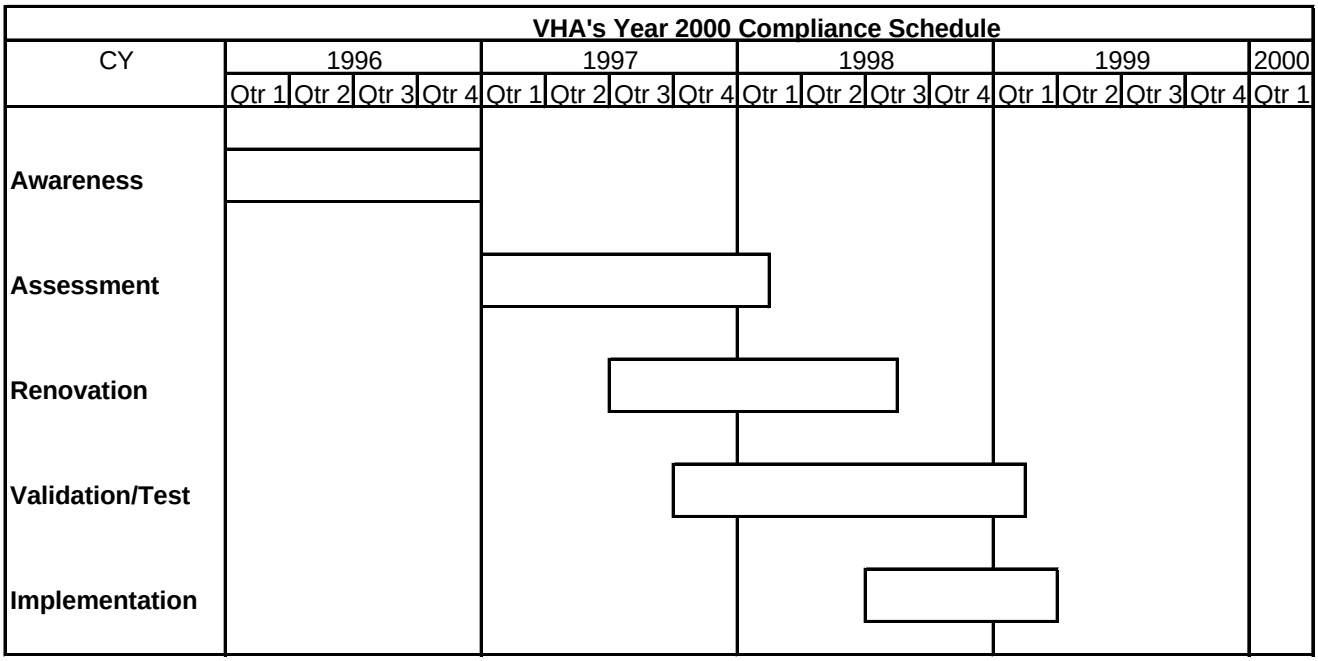
The methodology used to produce these estimates, as well as the estimates themselves, will change as we learn more about the scope and depth of necessary compliance activities in VHA.

1.4 Phases of VHA's Year 2000 Compliance Plan

We have developed a phased approach to achieve Year 2000 compliance. This approach follows the basic Year 2000 conversion model described in GAO's Year 2000 assessment guide, which suggests that

the process be managed in five interrelated and overlapping phases: awareness, assessment, renovation, validation, and implementation. These phases and their overall scheduling within our Year 2000 compliance effort are depicted in Figure 1.

Figure 1 VHA Year 2000 Compliance Schedule



1.4.1 **Awareness**

Awareness is the process of defining the problem for the organization and making organizational sub-units aware of its potential impact, developing a top-level Year 2000 strategy by involving VHA executive management, establishing a project office and assigning key personnel, and identifying field personnel and organizations with key roles in the compliance process. We have completed the core aspects of this activity, but also recognize that awareness must continue through all phases of Plan execution.

1.4.2 **Assessment**

Assessment covers such activities as detailed program plan development, complete system products inventory, interfaces analysis, Year 2000 impact assessment, identification of programming resource requirements, validation and test approach, tools survey and recommendations, contingency planning, and prioritizing VHA information system products. This document will evolve over time as the systems inventory and other assessment activities are completed.

1.4.3 **Renovation**

Renovation consists of the conversion, replacement, or retirement of affected system products in VHA. It may involve recoding software, ensuring that new software is compliant, and acquiring Year 2000 compliant versions of commercial products. Renovation must consider the complex interdependencies among applications, hardware platforms, databases, and internal and external interfaces, and must take into account the special considerations of VHA biomedical equipment and laboratory facilities. Renovation must also have a strong configuration management process to ensure adequate documentation, tracking, and communication of system changes.

1.4.4 **Validation/testing**

Validation/testing is arguably the most demanding phase in the compliance process because it consumes the most resources (both personnel and system/facilities), is the most difficult part of the process to schedule and manage, and requires a proven and comprehensive approach to ensure that system products are fully renovated, while maintaining all required system functionality including database interdependencies and interfaces. A significant portion (estimated to be more than one-half) of the total resources needed for Plan development and execution will be consumed during the validation/testing phase.

1.4.5 **Implementation**

Implementation requires that renovated and validated systems be re-introduced and re-integrated into the applications and systems environment with as smooth a transition as possible, minimal disruption to ongoing operations, and completion of a successful acceptance process. It is essential that the implementation phase be reinforced by contingency, data conversion, and disaster recovery plans that ensure the continuation of ongoing critical business processes and functions. We also recognize that a feedback loop from implementation to the renovation and testing phases is needed to correct problems, learn from mistakes, and maximize the effectiveness of the compliance process.

1.5 **Requirements for Monitoring Project Activity**

1.5.1 **VISN CIOs reporting to Year 2000 Project Office**

Each VISN CIO is asked to submit information requested by the VHA Project Office pertaining to inventories (software applications, COTS software and equipment, biomedical equipment, facilities equipment, etc.), Year 2000 compliance plans, milestones met versus schedules, and cost estimates. The Year 2000 Project Office has established templates for use by the VISNs in this reporting activity. Please see Appendix E.1 for a description of monthly VISN reporting requirements and report formats.

1.5.2 **Development of Intranet site**

The VHA Year 2000 Intranet page (http://vaww.va.gov/Year2000) is an online reference library for Y2K compliance information. The objective is to provide VHA field personnel with easy access to the latest compliance data. Areas of the site include: overviews of the compliance strategy in each of the eight major product categories, Project Office presentations and points of contact, downloadable copies of the most recent and historical Compliance Plans, a VISN guidance section with documents issued by both the Project Office and individual VISNs, and links to a wide variety of Y2K Internet resources. In addition, the site has listings of individual manufacturer and product compliance data, which are continuously updated as more information becomes available. The site is continually developing and growing. Field personnel are encouraged to check the site frequently for updates and to offer suggestions on additional information they would find useful.

1.5.3 **VA reporting requirements**

The Year 2000 Project Manager in the Office of the VA Assistant Secretary for Management has requested monthly progress reports showing overall project status, information system compliance status, COTS compliance status, biomedical equipment compliance status, explanations of milestone slippage, and changes to cost estimates. The progress data tables in this project plan are formatted according to this request.

1.5.4 **External reporting requirements**

Information will be provided to the VA Year 2000 Project Manager for inclusion in quarterly VA progress reports to be provided to OMB. The House Veterans Affairs Committee, the Senate Veterans Affairs Committee, the House Government Reform and Oversight Committee, and the House Science Committee, will be provided regular updates. The reports will include descriptions of organizational

responsibilities, status of compliance of mission-critical systems and other systems, milestone progress in project phases, cost estimates, explanation of schedule slippage and associated corrective actions, and contingency plans.

1.5.5 **GAO audit guidelines**

The VHA Year 2000 Project Office has reviewed the elements of the checklist contained in the GAO document entitled Year 2000 Computing Crisis: An Assessment Guide and has applied them in preparing this compliance plan. The Assessment Guide has been furnished to each VISN CIO and to the Associate CIOs.

1.6 **Assumptions and Constraints**

The VHA Year 2000 compliance effort recognizes that there are unique aspects of the problem that affect the overall approach. First, the compliance effort has an immutable deadline. Unlike other system development or maintenance activities that can accommodate slippage, the deadline for achieving and verifying Year 2000 compliance is fixed - implementation of all fixes must be completed by December 31, 1999 - and that deadline includes all validation and testing activities. Second, many of VHA's system products must be renovated, tested, and implemented concurrently, thus putting a strain on agency resources. Third, because many of VHA's system products inter-operate and share/exchange data, renovated systems must be tested together, while the systems continue to operate in a production mode. This is a challenge in overall software/systems project management that makes the Year 2000 compliance problem a highly complex technical issue.

2 ELEMENTS OF THE VHA'S YEAR 2000 COMPLIANCE PLAN

2.1 Overall Master Schedule for Year 2000 Compliance

This compliance plan divides all Year 2000 compliance project activities into five broad phases - awareness, assessment, renovation, validation, and implementation. Management of the project is based on this five-phase structure for assigning and scheduling tasks, planning resource allocation, and tracking progress. Table 1 summarizes the forecast completion dates for the five project phases for VHA. A more detailed presentation, which includes a work breakdown structure, and task durations, is contained in Appendix A.

Table 1 Master Schedule for Year 2000 Compliance

PHASE	Awareness	Assessment	Renovation	Validation	Implementation
Completion Date	1/1997	1/1998	7/1998	1/1999	3/1999

2.2 Schedule of Conversion/Replacement and Priorities for VHA System Products

Due to the limited amount of time and resources available for Year 2000 renovation, it is essential to set priorities for activities within all phases of the overall Year 2000 project. During the current assessment phase, priority is given to at-risk, business critical systems already in use. Health and safety risks will be important factors in prioritizing systems. Assessment, renovation, validation and testing, and implementation projects will be monitored for business, financial, legal, political, and end user concerns.

The Assistant Secretary for Management has created a categorization scheme for information system applications which can be generalized for all system products.

- Level I - Business priority systems: These systems directly impact delivery of medical care and benefits to veterans, are essential to the Department's mission, and are referred to as mission-critical. These systems may require time-consuming renovation and testing.

- Level II - Internal support systems: These include internal agency systems used to improve timeliness and efficiency of administrative processes, provide operations support, or produce periodic reports. Failure of systems is deemed as not having a direct, adverse effect on veterans. These include small office and personal computer systems that are tailored to specific functions or processes not considered mission-critical.

- Level III - Discontinued Systems: These are systems scheduled for discontinuation prior to 2000. VHA will replace these systems as part of a normal life cycle process, or schedule them to be discontinued prior to 2000. These may include systems scheduled for elimination because there is no further legislative or program sponsor requirement to maintain them.

Priority will be given to systems affecting many people, posing serious threats to individuals, or seriously interrupting and preventing staff from accomplishing their tasks. Priorities will be set for each system product category.

Hardware Systems in general may pose a variety of Year 2000 compliance issues. Biomedical systems and facility systems, particularly, may pose hazards to staff and veterans if they fail. For similar reasons, failures of computers and communications systems in medical care facilities can only be tolerated for

short periods. There are many items, types, and unique configurations of equipment that may be costly and time-consuming to analyze. Priority will be given to rapid and precise assessment to tell us where the risks are most serious, and what must be done in this area.

Software Systems are expected to have a large number of items for renovation, and therefore a high cost for renovation. These systems are business critical because of the volume and critical nature of the daily business and health care related information flowing through them.

Appendix B.1 displays priorities and planned milestone dates for the compliance of **V*IST*A** applications. The basic inventory information for **V*IST*A** Year 2000 projects is: application name; priority level; version; compliance status (compliant, replace, recode, eliminate, or cancelled); renovation dates; patches completed; validation/testing dates; implementation dates; and projected fail date. This information will help in tracking the inventory while projects are active, in reporting progress, and in final certification of these systems.

Appendix B.3 displays compliance status for VHA corporate systems. The basic inventory information for corporate systems is: application name; priority level; compliance status (confirmed compliant, replace, recode, or eliminate); renovation dates; validation/testing dates; implementation dates; and projected fail date. This information will help in tracking the inventory while projects are active, in reporting progress, and in final certification of the corporate systems.

Similar information will be required of every system product. A final certification will clearly state the system, the responsible person, and the reason(s) for asserting compliance. Appendix E explains how Guidance Documents and Checklists will be prepared in a way that is sensitive to the category of system. The Project Office will help set guidelines and priorities within categories, and will exercise oversight and guidance in resolving priorities between categories.

2.3 **Quality Assurance and Progress Reporting**

This section presents the methods used for tracking, measuring and reporting compliance plan progress.

2.3.1 **Risk assessment discussion**

All system products present varying degrees of risk from Year 2000 problems to the VHA mission of providing quality health care to veterans. Year 2000 risks of mission-critical system products will be evaluated during the compliance process, and contingency plans established. Contingency plans may be developed for lower-risk, non-mission critical system products if management considers their failure to be of serious consequence to the success of the VHA mission. Providing high quality health care services to veterans depends largely on the ability to process patient medical data (histories, laboratory test results, prescription drug information, treatment plans, etc.). For example, a significant risk exists if the information systems involved in patient care fail due to the inability to properly process dates and exchange information. In addition, biomedical systems that have built-in clocks or transmit data to information systems, or facilities-related systems with clocks are other sources of risk. The VHA *Year 2000 System Product Risk Program* developed by VHA specifically addresses the risk mitigation approach for establishing contingency plans for the eight categories of Year 2000 at-risk products identified in Section 1.1.2 of this plan, and this program is applicable at all VHA locations.

On the Year 2000 compliance project level, there are three major components of risk; technical risk, resource risk and time risk. Technical risk is related to the size or complexity of the system or the number of interfaces with other systems. Resource risks represent shortfalls in the available resources

consisting of funding, people, and facilities. Time risk represents the possibility that the compliance process cannot be completed prior to the occurrence of a Year 2000-caused error.

The VISN CIOs and the Year 2000 Project Office will prioritize the products according to the degree of risk to the VHA mission. Milestones will be set and resources allocated so that the most important applications and products are made compliant first. Contingency plans will be developed for mission critical systems with potential Year 2000 problems. VHA already has many contingency plans in place at its hospitals and many of its facilities. Where applicable, those existing contingency plans may be used to accommodate potential Year 2000 failures. GAO has issued an exposure draft of a document entitled Year 2000 Computing Crisis: Business Continuity and Contingency Planning which, when finalized, could provide guidance to the medical centers when addressing contingency plans for the Year 2000 issue.

Factors affecting project management

- The Year 2000 problem is pervasive and is found not only in software but in hardware and equipment.
- Mission-critical applications and systems must be given the highest priority for renovation, testing, and implementation.
- Some applications or systems may fail prior to 2000. These must be identified and schedules created accordingly.
- Resources available for Year 2000 work will become increasingly scarce as the Year 2000 approaches.
- Funding for Year 2000 work will come from existing programs.
- A critical aspect of this plan is whether sufficient computer resources exist to complete the Year 2000 conversion. This includes processing capability, disk storage, operations support, and software tools to support a logically separate renovation and testing environment for the duration of the project. Contingency planning must take this issue into account.

Factors affecting VHA information systems

- Time and programming resources may not permit looking at source code line-by-line; therefore, software tools will be needed for assessment.
- There is no “silver bullet” solution to the Year 2000 problem. Many different solutions must be applied to address all affected software, equipment, and systems.
- Although use of VA File Manager conventions may eliminate Year 2000 problems in many VHA applications, exceptions to those conventions may have been granted in some software development.
- There is a risk that all of the year references in a product, a process, an application or a data set will not be found, and that new errors may be introduced when making Year 2000 corrections/conversions.

VHA’s vulnerability to system failure will be assessed on a system-by-system basis. Some system failure dates occur prior to January 1, 2000. Therefore, the order in which systems must be renovated will depend on the expected failure date. For each mission-critical application, VHA will determine the date by which it must be Year 2000 compliant and in operation. These “drop dead” dates will be factors in working backwards to schedule the renovation, validation and implementation activities associated with these systems, as well as the need for contingency planning.

2.3.2 **Performance measurements and reporting mechanisms**

The VHA Year 2000 Project Office has created an overall project schedule and reporting format. This format will be used by the VISNs to set up their own compliance schedules. Progress reported by each VISN will be rolled up into a total VHA progress report and generated monthly.

2.3.2.1 **Master schedule status** - Table 2 shows the overall VHA Year 2000 compliance plan progress for all mission-critical systems.

Table 2 VHA Year 2000 compliance plan progress - mission critical systems

PHASE	Awareness	Assessment	Renovation	Validation	Implementation
Percent Complete	100%	100%	95%	87%	65%

2.3.2.2 **V*IST*A and Corporate Systems schedule and priorities** - Appendix B.1 shows the scheduled and actual dates that VHA **V*IST*A** software applications were renovated, tested, and implemented, thereby achieving Year 2000 compliance. Appendix B.3 shows the scheduled dates for renovation, validation, and implementation of VHA Corporate Systems to achieve Year 2000 compliance.

2.3.2.3 **Compliance progress for VHA-controlled software applications** - Table 3 summarizes the progress in achieving Year 2000 compliance for VHA-controlled software applications.

Table 3 Compliance progress for VHA-controlled software applications

Category of Application	# in Category	# Recoded, Replaced, or Confirmed Compliant	# Eliminated	% Compliant
V*IST*A Software	152	49	33	54%
Local Software	*	*	*	*
Corporate Systems	138	84	42	91%

* Value to be determined through completion of inventories and updated as required

2.3.2.4 **Compliance progress for categories requiring manufacturer input** - Table 4 summarizes VHA progress in achieving Year 2000 compliance for COTS software, computer and communications equipment, biomedical equipment, and facilities-related systems and equipment.

Table 4 Compliance progress for product categories requiring manufacturer input

Category of Equipment	# in Category	# Repaired, Replaced, or Confirmed Compliant	# Eliminated	% Compliant
COTS Software	*	*	*	*
Computer/Comm. Hardware	*	*	*	*
Biomedical	*	*	*	*
Facilities Systems	*	*	*	*

* Value to be determined through completion of inventories and updated as required

2.3.2.5 **Explanation of milestone slippage or Year 2000 cost adjustments** - VHA will track project progress and milestones, with emphasis on Level I mission-critical systems. If milestones are missed by two months or more, explanations will be included in the project progress reports to VA and OMB. Estimates of actual Year 2000 compliance and activity costs will be tracked versus projected costs, allowing future estimates to be refined. Explanations will be provided if refined estimates differ from original projections by more than ten percent.

2.3.2.6 **Responding to information and reporting requirements of Congress, OMB, GAO, and VA** - VHA will provide reports to various Federal agencies on the scope and progress made in resolving the Year 2000 problem. These reports will be prepared regularly and issued as required to the requesting organization.

2.3.2.7 **Use of Intranet knowledge base** - The VHA Year 2000 Project Office has established a page on the VHA Intranet (http://vaww.va.gov/Year2000). Summary progress reports will be posted on this page for review by interested VHA personnel. In this manner, awareness of the Year 2000 problem and the positive steps being taken to resolve it will be enhanced.

2.4 Awareness

2.4.1 Phase objectives

The overall objective of the awareness phase is to create an environment that increases knowledge of the Year 2000 problem and improves communication within VHA.

2.4.2 Organizational responsibilities

Senior management must be knowledgeable about the Year 2000 problem and exactly what VHA is doing to address it. Upper management plays a vitally important role in shaping the organization's response to the problem by assessing levels of risk, approving strategy, and establishing communication policies. The success of the project depends on the understanding of the problem and commitment from all levels of management, technical, administrative and clinical personnel.

2.4.2.1 **VHA CIO** - VHA CIO has commissioned the Year 2000 Project Office with the responsibility to heighten awareness through communication and guidance of the project. The Project Office will create an overall environment that will enable the Year 2000 project to succeed. The Program Manager for Quality Assurance, Technical Services, will provide technical guidelines and resources to the **V***IST***A** software development community in VHA.

2.4.2.2 **VISN CIOs** - The VISN CIOs must create awareness in their networks on the magnitude of the Year 2000 problem and the efforts needed to resolve it. Input on plan progress from each VISN CIO is vital and their participation in meetings, conference calls, mailings and e-mail work groups is crucial.

2.4.2.3 **Health care facility management** - The health care facilities must be directly involved in the inventory, assessment, renovation, testing and implementation efforts. They must ensure that all VHA personnel are aware of the Year 2000 problem and its implications for the delivery of high-quality health care to veterans.

2.4.2.4 **Other organizations** - It is essential to include all members affected by the Year 2000 problem in this process. Specific areas from which representation will be needed are Acquisition

and Materiel Management, Engineering and Facilities Management, Information Resource Management, Pathology and Laboratory Medicine, Medical, Quality Assurance, and Radiology.

2.4.3 **Schedule (status) and description of principal activities**

Many awareness activities are already completed or ongoing. The Project Office has taken an active role in communicating Year 2000 progress through briefings with VISN CIOs, completing the response to the Assistant Secretary for Management readiness review assessment, participating in national VA facilities directors and national IRM hotline calls, distributing draft contract language to procurement officials, and communicating with the field through newsletters, electronic mail, and meetings. Further awareness activities include monthly conference calls to the field, creating a Year 2000 web page, presenting at national conferences and meetings, Year 2000 status reports to the House Committee on Government Reform and Oversight's Subcommittee on Government Management, Information and Technology and the Committee on Science's Subcommittee on Technology, and congressional briefings by the VHA Year 2000 Project Manager.

2.4.4 **Cost monitoring of awareness phase**

Costs of conducting awareness activities will be collected at the VHA CIO and VISN level and reported to the Project Office monthly.

2.5 **Assessment**

2.5.1 **Phase objectives**

Assessment is the overall process of evaluating the impact of potential Year 2000 compliance problems on the organization's systems environment and the business functions that this environment supports. Assessment covers the complete range of system products in VHA (both within and outside the traditional information systems area). It involves an enterprise-wide inventory, assessing and prioritizing system products to be renovated, identifying and mobilizing needed resources (both within and outside VHA), identifying and acquiring automated tools, developing validation and testing strategies, addressing and planning for implementation issues, profiling system interfaces, analyzing data exchange issues, and developing contingency plans. Assessment should result in a comprehensive picture of Year 2000 issues and a clear plan to track and achieve compliance.

2.5.2 **Organizational responsibilities**

2.5.2.1 **VHA CIO** - The Year 2000 Project Office is responsible for preparing the Year 2000 compliance plan as part of the assessment phase, and for conducting all supporting activities including system products inventories, system interfaces profile development, Year 2000 impact analysis of the various classes of system products, prioritization of compliance activities, resources identification, automated tools survey, preparation of refined cost estimates, test planning, and contingency planning. The Project Office will provide guidance or templates that can be used by the VISN CIOs as a checklist when creating their own individual network compliance plans (please see Appendix E.1). The Program Manager for Quality Assurance, Technical Services, is responsible for **V***IST***A** Class I assessments and for providing facilities technical assistance with Class III assessments.

2.5.2.2 **VISN CIOs** - The VISN CIOs are responsible for developing local compliance plans, conducting all supporting activities, and implementing the plan at health care facilities within their own network. A plan should be developed by each VISN CIO that communicates and coordinates the identification, inventory, and prioritization of system products in their network.

In addition, each VISN plan should contain specific timetables for achieving compliance of all system products within the VISN's health care facilities.

2.5.2.3 **Health care facility management** - The health care facilities are responsible for implementing the VISN's compliance plan. This includes completing an inventory, conducting the overall impact assessment, prioritizing the system products, and supporting plan execution in the remaining phases.

2.5.2.4 **Other organizations** - Other VHA organizations are responsible for providing inventory data, resources, and technical support.

2.5.3 **Schedule (status) and description of principal activities**

2.5.3.1 **VHA-wide system product inventories and impact analyses** - Assessments are underway in all eight product categories.

- An inventory of **V*IST*A** Class I software applications has been completed. The inventory and Year 2000 compliance status of these applications are available on the Technical Services Intranet web site (http://152.127.1.95) and are maintained on a monthly basis.

- A component inventory was prepared both manually and through tools, to identify raw components of all **V*IST*A** applications as a precursor to full impact analysis. Each exported software component is being monitored for changes that impact an application's progress or certification. Extensive use of tools is expected to provide tracking and reassessment methods. The Program Manager for Technical Services, Quality Assurance (192-1B), assessed **V*IST*A** applications to identify date-related fields, calculations, and Year 2000 compliance issues.

- All possible date instances identified through code analysis have been captured and logged. Development teams have reviewed all matches to verify the integrity of the date processing and values. Technical documentation and standard procedures have been provided to development teams to facilitate the review, reporting and reconciliation of the code analysis results. All applications in the **V*IST*A** application portfolio have been assessed for compliance and necessary renovation work is 97% complete.

- The 22 VISN CIOs are preparing individual Year 2000 compliance plans that will address the issue of inventorying and assessing local software applications. VISN CIOs are responsible for completing the assessment of local applications, and will have access to an M code analysis tool once evaluation of that tool is completed by the Program Manager for Quality Assurance, Technical Services. Technical Services will provide written guidance to the VISN CIOs and health care facilities on application of the tool and analysis of code in the fall of 1997 once a national procurement of the tool is executed.

- The Office of the VHA CIO has produced an inventory of VHA corporate systems and databases. Based on the inventory, the Project Office has sent letters to the system owners throughout VHA requesting assessment and compliance status of their systems. To assist in determining compliance, a Year 2000 compliance checklist has been

developed and forwarded with the letters. For the systems that require renovation, schedules for the steps in the compliance process will be prepared by the system owners.

- The VHA CIO has requested the VISN CIOs to prepare an inventory of all COTS clinical and administrative software, office automation software, LAN equipment and operating systems, and PCs. The survey covers all VHA health care facilities including medical centers, outpatient clinics, domicilliaries, and nursing home care units. Many of the COTS products interface with **V*IST*A** software. The Project Office has sent compliance status request letters to more than 500 COTS software vendors. Additional letters will be sent as vendor's names and addresses are verified. Compliance information also is obtained from manufacturers' Web sites.

- The preliminary approach to identify and remediate biomedical equipment involves the following steps: (1) increase awareness and continually educate VHA CIO and ACIOs, VISNs, and health care facilities on biomedical issues; (2) establish a Medical Device Integrated Product Team to provide continuous guidance and communicate results to the field; (3) define risk categories for medical devices; (4) survey vendors to identify status of equipment and solutions for non-compliance; (5) define strategy to evaluate vendor responses; and (6) refine approach to renovate, validate and test medical devices.

  The Project Office has contacted biomedical experts inside VHA to determine the best method to identify and inventory mission-critical biomedical equipment. To assist with identifying, inventorying, assessing, and evaluating medical devices that are at risk, VHA has established a multi-disciplinary oversight team to ensure that medical devices are compliant. The Medical Devices Integrated Product Team includes experts from the following fields: Radiology, Nuclear Medicine, Pathology & Laboratory, Biomedical Engineering, Acquisition & Materiel Management, Medical Research, Prosthetics, Medicine, Cardiology and Surgery. VHA is an active member of the Interagency Workgroup on Embedded Systems, working with members of FDA, HHS, and DoD in order to collaborate and maximize our efforts in this area.

  We have identified more than 1,600 manufacturers of medical devices and mailed them letters seeking their plan for compliance. We have received 1047 responses. 696 manufacturers assert that their entire product line is compliant, 128 manufacturers state that they have products which are not compliant, and 52 manufacturers' responses are pending, which means they have responded but are still researching and testing their equipment. 171 manufacturers have been bought out or merged with another company or are no longer in business. We have also made telephone contact with the dozen manufacturers who have the largest number of products in the VHA system and who have not yet provided us with a response. On October 6, 1997, a second letter went out to manufacturers from whom we have not yet received a reply requesting their response as soon as possible.

- The VHA Year 2000 Project Office has identified more than 250 manufacturers of Facility-related systems and mailed them letters and searched Web sites seeking information on compliance of their products. Information on 156 manufacturers has been retrieved.

- Members of the Year 2000 Project Office are conducting site visits at each VISN and meeting with members of their Year 2000 team. These information sharing meetings are intended to assess VISN progress and assist in problem areas.

2.5.3.2 **Interfaces profile** - As a subset of the system product inventories, a profile of data interfaces will be created. Each profile record will be a description of the data exchange format for a particular interface, an initial assessment of compliance, and the actions necessary to reach compliance. The interfaces profile feeds directly into the development of contingency plans and test plans for various system products. It is essential that interfaces be examined thoroughly before Year 2000 impacts can be assessed and system products prioritized for renovation and ultimately Year 2000 compliance certification.

The Project Office has begun to identify interfaces between the VISTA and corporate systems product categories and other Federal agencies and outside organizations. Details of the interfaces are being tabulated including the purpose, elements, and format of the data, the media used and the frequency of the exchanges. Year 2000 compliance of the interfaces will be assessed and discussions held with the other agencies and organizations to discuss compatibility and define renovation strategies, as required.

2.5.3.3 **Year 2000 tools survey and analysis** - The Project Office is conducting a survey and evaluation of Year 2000 tools, covering project management, cost estimation, assessment, renovation, validation/testing, and other specialized tools. Appendix D contains a survey form being used to collect the data. Specialized tools can significantly reduce the labor required to inspect, assess, correct, and test affected applications and systems.

Technical Services has inspected 100% of the **V*IST*A** application suite through the use of the code analysis tool, RE/2000, manufactured by George James, Assocs. Technical Services has selected and purchased the code analysis tool and is using it in its identification of date related processing in its M source code. This tool has been selected for use by the field facilities and national procurement and distribution to the field was complete in November, 1997.

2.5.3.4 **Identification and assessment of Year 2000 programming resources** - VHA is proceeding under the assumption that there is neither sufficient time nor resources available to have developers examine code line-by-line. The Associate CIO for Technical Service will determine upon completion of analysis efforts all M programming resource requirements associated with the Year 2000 conversion and conduct an industry survey to identify vendors to test VHA sample code. The Project Office will support this effort by identifying sources of M programming support.

2.5.3.5 **Preparation of contingency plans for mission-critical VHA system products** - Every medical center has a disaster recovery plan that includes back-up procedures for critical business processes and functions. Year 2000 compliance activity requires that disaster recovery plans be reviewed in light of potential Year 2000 failures. The Project Office and the Emergency Medical Preparedness Office will communicate the need to develop back-up plans for software systems undergoing conversion, facilities-related systems, and biomedical equipment, and provide guidance. Ultimately, the health care facilities are responsible for developing and verifying that these plans are workable.

2.5.3.6 **Refined and updated cost estimates for Year 2000 compliance** - During the assessment phase, the Project Office will develop a methodology for refining the original cost projections. Cost estimates for each compliance phase will be continually updated and reported to the Project Office on a monthly basis.

2.5.4 **Cost monitoring of assessment phase**

Costs of assessment will be collected at the CIOFO and VISN level and reported to the Project Office monthly.

2.6 **Renovation**

2.6.1 **Phase objectives**

In the renovation phase, the results of the assessment phase are translated into Year 2000 compliance actions required to convert, replace, or retire VHA system products. Renovation may involve conversion of an existing **V*IST*A** or other application system; replacement of older applications and systems with Year 2000 compliant products; and retirement of an existing application or system component. A key objective in renovation activities is to exercise careful change control, while communicating actions to all affected internal and external system users. Renovation also involves the tracking of conversion projects and the collection of project metrics for managing cost and schedule. Renovation ties closely to the validation/testing strategy described in Section 2.7.

2.6.2 **Organizational responsibilities**

2.6.2.1 **VHA CIO** - At the national level, the VHA CIO will monitor costs and progress of all renovation projects for consolidated reporting to all oversight organizations and interagency working committees. The Project Office will work to resolve resource issues at the proper level. The Associate CIO for Technical Service has the responsibility for **V*IST*A** renovation activities.

2.6.2.2 **VISN CIOs** - The VISN CIOs will assign resources, manage all renovation activities, and ensure Year 2000 compliance within their network. They will track costs and progress of all renovation projects and provide training and expertise to the local health care facilities to accomplish renovation projects within plan guidelines.

If the system product is one that is replicated across many facilities, then a Renovation Integrated Product Team (IPT) may be assigned. The Renovation IPT could be drawn strictly from one local facility, a local facility with backup from their VISN, several facilities geographically distributed but having a common problem, a national working group, a vendor and a local facility, an interagency working group, or any combination that is clearly identifiable and capable of accepting the responsibilities and liabilities of proposing a clear and workable solution.

2.6.2.3 **Health care facility management** - Responsible personnel at local medical facilities will draw on many different departments depending on the type of systems to be renovated. If there are only a few systems to be renovated unique to one facility, then renovation, testing, and implementation will be carried out on the same site.

2.6.2.4 **Other organizations** - Other VHA organizations may be involved in renovation activities and provide additional guidance or feedback on Year 2000 compliance issues. These include the Assistance Secretary for Management, Office of Acquisition and Materiel Management, and General Counsel (for product liability and contract expertise).

2.6.3 **Schedule (status) and description of principal activities**

For **V*IST*A,** renovation will be the actual conversion of affected software components, updating of documentation and user instructions, database maintenance, prototype testing and field-based system acceptance testing. To support renovation of **V*IST*A** Class I applications, a Year 2000 planning and implementation guide has been developed and has been distributed to the CIO development teams. A similar guide has been provided to the field along with the RE/2000 tool.

Personal computer renovation might involve the installation of new software or microprocessors. For example, it might be possible to install a software patch to the system BIOS for every PC with a pre-Pentium processor and every system running DOS or Windows 3.1. Other hardware renovation activities will be described in implementation guidelines to be included in Appendix E.

For each system to be renovated, the Renovation IPT will find a workable solution, identify all locations where the solution will be applied, and develop explicit instructions for implementing (fielding) a solution at many locations. The Renovation IPT will be responsible for seeing that all sites where the solutions are to be implemented are notified, will be the first point of recourse during the implementation, and will be judged on the successful implementation of their solution. Renovation schedules and progress will be monitored.

2.6.4 **Cost monitoring of renovation phase**

Costs of renovation will be collected at the VHA CIO and VISN level and reported to the Project Office monthly.

2.7 **Validation/Testing**

2.7.1 **Phase objectives**

VHA recognizes that validation/testing is perhaps the most critical phase of the entire compliance project and requires the most resources and longest period of time for comprehensive execution. The objective of the validation/testing phase is to ensure that all converted or replaced system components will operate error free and will provide the same functionality, reliability, and availability that were provided before the Year 2000 conversions or replacements were made. Validation/testing will uncover errors introduced during the renovation phase, validate Year 2000 compliance, and verify operational readiness.

2.7.2 **Organizational responsibilities**

2.7.2.1 **VHA CIO** - The VHA CIO is responsible for developing an overall test philosophy and a master test plan, providing support for the identification of validation/testing resources, monitoring overall validation/testing activities within the organization, and providing top-level validation/testing guidance for all categories of VHA system products. In addition, within the Associate CIO for Technical Service (192), the TS Quality Assurance office (192-1B) is tasked with developing a test approach and guiding test activities specifically for the **V*IST*A** application suite. The Program Manager for Quality Assurance, Technical Services, is responsible to certify **V*IST*A** software.

2.7.2.2 **VISN CIOs** - VISN CIOs are responsible for formulating and overseeing validation/testing activities within their network, reporting on validation/testing progress and status, interacting with their VISN counterparts to share validation/testing information, and certifying Year 2000 compliance at the system product level.

2.7.2.3 **Health care facility management** - Health care facility personnel are responsible for developing detailed test plans and procedures for systems within their network, executing validation/testing plans and procedures, and documenting and reporting test results for the VISN CIOs.

2.7.2.4 **Other organizations** - Other VHA organizational elements may be involved in validation/testing activities for various categories of VHA system products, and for providing guidance and feedback within their organizations on Year 2000 compliance issues that arise during the validation/testing process.

2.7.3 **Schedule (status) and description of principal activities**

Year 2000 validation/testing is considered by the VHA CIO as spanning the entire process of compliance, from problem awareness and assessment through implementation. In the assessment phase, VHA is establishing an overall validation/testing strategy, defining top-level validation/testing requirements, assessing applications and system products to determine where and how test resources must be applied, and preparing guidelines for field organizations to develop detailed test plans and procedures. The VHA Year 2000 Project Office is developing a Year 2000 Master Test Plan (MTP) to support VHA organizations in their development of more detailed Year 2000 test plans that are specific to their needs. The MTP provides overall strategy, guidance, support and recommendations for establishing organizational test plans, and for conducting the validation/testing phase (e.g. compliance statement, test approaches, testing methodology, conducting tests, suggested test dates, checklists, additional sources of information, acronyms and terminology).

In subsequent compliance phases, unit testing will be accomplished during renovation; integration testing, regression testing, performance testing, stress testing, forward and backward time testing, and system testing during validation; and operational/final acceptance testing during implementation. Validation/testing is an ongoing activity that requires comprehensive planning. Test planning lays out the tasks, resources, methods, test results, schedules, responsibilities, risks and assumptions in test execution. The critical nature of this planning activity must be communicated to the field organizations.

There are a number of test planning activities that will be coordinated by the Project Office to provide guidance and structure to field validation/testing activities. These activities are primarily the responsibility of the VISN CIO and include:

- Establishing test requirements for renovated applications. Definition of test requirements are based primarily on the type of renovation method used (examples are expanding the year field to four digits, using a 100 year logic window, employing a data bridge that uses a logic window, reversing the system clock and using a 28 year time bridge (encapsulation), or replacing or retiring the system). This is a critical part of the overall validation/testing process.

- Selecting an optimum test environment - The results of the impact assessment for VHA system products will influence the ultimate selection of a test environment, including the selection of automated testing tools and other required resources. The test facilities and environment must be acquired, established, or developed to minimize conflicts with production system requirements. Multiple test environments for **V***IST***A** Class I applications exist and will be used. The test environment will include prioritization mechanisms, cross-over data, and roll-over data. VHA recognizes that test scripts and scenarios provide a reasonable, repeatable way to stress test systems with various problem dates.

- Test plans and procedures guidelines (by VHA system product category) - The Project Office will develop and distribute test plan and procedure guidelines for field organizations.

- Identification and coordination with potential test sites – The VISN CIO and network health care facility managers will identify potential test locations for various system products, analyze the resource requirements, and coordinate with internal organizations for scheduling and use of test locations.

- Defining test acceptance criteria (exit criteria checklist) – The VISN CIO will also develop a set of test acceptance criteria to insure verification of the system product's ability to process dates before and after the transition to the Year 2000. The Project Office will provide technical support in this activity.

- Establishing standards for documenting test results – The Project Office will establish VHA standards for use by VISN CIOs in documenting and reporting test results, including a mechanism for feeding back test outcomes into renovation activities. System products that pass the validation/testing process will be certified as Year 2000 compliant and copies of the certification will be delivered to the VHA Year 2000 Project Office.

2.7.4 **Cost monitoring of validation and testing phase**

Costs of validation and testing will be collected at the VHA CIO and VISN level and reported to the Project Office monthly.

2.8 **Implementation**

2.8.1 **Phase objectives**

Once affected VHA system products have been renovated and have undergone the initial steps in the validation/testing phase, they must be implemented in the field. This phase requires final acceptance testing in the field to ensure that all system components perform adequately. It also requires that all data interface/bridging issues be satisfied so that the risk of non-conforming data is minimized, and that procedures are in place to handle any remaining data conversion issues. VHA's primary objectives in this phase are to adequately handle all transition and interface issues as systems are brought back into a full-scale production environment while executing change control, back-up, disaster recovery, and contingency plans as required to ensure that implementation is basically risk free.

2.8.2 **Organizational responsibilities**

2.8.2.1 **VHA CIO** - The VHA CIO is responsible for issuing guidance on data exchange issues, developing disaster recovery and contingency planning guidelines, developing configuration management guidelines, maintaining user awareness, and providing a feedback and information dissemination mechanism for VHA-wide organizations. Through the Project Office, the VHA CIO is responsible for coordinating and managing all implementation activities. The implementation of the **V***IST***A** conversion is the responsibility of the ACIO TS through monitoring, certification, and synchronized scheduling.

2.8.2.2 **VISN CIOs** - Each VISN CIO has ultimate responsibility for executing their individual implementation plans, establishing a transition environment that is conducive to implementing renovated and validated system products, resolving all data interface and data exchange issues, completing and approving acceptance testing activities, and implementing back-up plans if required. VISN CIOs provide feedback to the VHA CIO on the results of implementation

activities so that VISNs benefit from the outcomes of each other's compliance activities. VISN CIOs also are responsible for certifying final Year 2000 compliance.

2.8.2.3 **Health care facility management** - Individual units in the medical facilities and other affected VHA facilities are responsible for conducting integration and acceptance testing, and integrating converted and replaced systems and related databases into their production environments. Medical facility management must also tailor disaster recovery, contingency, and other back-up plans to their own system product environment and be prepared to execute these plans, as required.

2.8.2.4 **Other organizations** - Other VHA organizations are primarily responsible for conveying Year 2000 implementation results and awareness to their staff, and supporting implementation activities that directly affect their own operations. This includes coordination relative to data conversion, data interface, or other data exchange issues.

2.8.3 **Schedule (status) and description of principal activities**

In the area of software applications, the following implementation phase activities will be conducted:

- Implementation scheduling issues. At this time it is expected that renovated releases of **V*IST*A** software applications, corporate systems, and other major software applications will be implemented as part of the steady stream of maintenance and enhancement releases commonly occurring in most applications. Renovation activity that requires integration testing and release with other applications, or with other renovated information systems, will be coordinated closely with the appropriate offices.

- Transition environment and procedures. **V*IST*A** renovations will be monitored and implemented in several controlled and live test environments prior to release nationwide. These test environments will serve to test successful transitions in each application to ensure backward and forward compatibility with surrounding applications. Gradual transition from non-compliant to compliant status of each of the 152 applications through maintenance releases will be planned to reduce the impact of the changeovers. Transition impacts for other software system products will be managed through interaction with the system owner or responsible office.

- Data conversion/bridging issues. All **V*IST*A** data structures are expected to be VA File Manager-compatible. This expectation imposes specific data formats and usage practices, and the requirement to document exceptions and impacts.

- Minimizing conflicts with ongoing systems development and production. Where possible, impact analysis and renovation of software applications will be performed by system developers intimate with the product line. To minimize impact on ongoing workload, outsourcing of renovation activity will be considered providing it does not impose risks to the success of the transition project or surrounding workload.

- End user training and awareness. Renovation work in **V*IST*A** and other software applications having operational impact on the user community will be published through appropriate inter-office communications or written and/or electronic documentation. Technical Services has requested the involvement of the Implementation and Training and Customer Service areas of the CIO organization to coordinate end user training if appropriate. Progress of **V*IST*A** transitions is available for viewing on the Technical Services Intranet web site (152.127.1.95).

- Configuration management/change control. **V***IST***A** releases are closely tracked and documented via established naming, numbering, sequencing, and release procedures required for use by all development teams. Every release, regardless of the vehicle, can be traced by delivery date, source, owner, interfaces affected, revision description, and recipient, through a variety of national tracking and reporting vehicles. Neither configuration management nor change control issues are expected to arise due to pre-existing policies and procedures.

- Contingency plans. Each software application will be assessed based on its relative priority and the ability of the organization to renovate prior to the earliest *critical* date failure threshold. If renovation work is not expected to be completed prior to the critical date failure threshold, contingency plans will be developed to provide workarounds where possible and the priority of the project will be reassessed.

Hardware system changes in each of the system product categories will be planned and monitored like the software systems, but implementation activities will be specific to the category and type of system product. During implementation of hardware changes, there will be schedules, transition plans, database conversion, data archive, configuration control, and contingency planning issues to address since many of the hardware systems are linked into networks and databases. In addition, biomedical and facility systems present unique challenges in their interface to software applications, the need for medical staff awareness and training, and the public's perception of potential Year 2000 problems.

The approach to each particular hardware system product may turn out to be straightforward, but the sheer number, diversity, and geographical dispersion of hardware system products will add to the complexity of implementing fixes. Many of VHA's hardware systems currently in use today - elevators, security systems, lighting controls, environmental controls, and laboratory control systems - will still be in use in 2000. The older systems are more likely to have embedded date problems and may contribute to an increased probability of a technical problem or failure. To reduce this probability, the Project Office and the VISN CIOs will publish guidance for VHA field units in the form of implementation guidelines for such hardware products as fax machines, personal computers, elevator controls, embedded computers in biomedical instruments, HVAC system controls, phone systems and switches, communication networks, point-of-sale devices, and others as required.

2.8.4 **Cost monitoring of implementation phase**

Costs of implementation will be collected at the VHA CIO and VISN level and reported to the Project Office monthly.

2.8.5 **Feedback of implementation results to renovation and testing activities**

The process of implementation will occur in stages and will undoubtedly raise management and technical issues as compliance problems and anomalies are uncovered. VHA believes that it is critical to analyze and resolve these issues and to feed the results of these analyses back into ongoing renovation and testing activities. A mechanism to do this, relying heavily on use of the VHA Intranet Year 2000 home page, will be developed and implemented as part of the final Year 2000 Compliance Plan. The Program Manager for Quality Assurance, Technical Services, will monitor post-implementation activity in **V***IST***A** applications to determine latent or newly introduced Year 2000 problems in software.

2.9 **Addressing Legal, Liability, Certification, and Related Policy Issues**

In parallel with the development of this compliance plan, we are addressing and assessing the range of legal and contractual issues that arise as Year 2000 compliance is sought for VHA system products. The General Services Administration (GSA) is posting guidance on their Year 2000 Internet home page, and the Federal Acquisition Regulation (FAR) has been amended to include Year 2000 compliance definition and rulings. The Project Office, in consultation with the VA General Counsel, will provide guidance and recommendations to VHA field organizations regarding complex questions in VHA-vendor relationships (e.g. software licensing and maintenance agreements, software ownership questions, manufacturers' warranties, disclosure requirements, Year 2000 compliance certification, and various liability issues). These are complex policy issues that will require the involvement of contracting, legal, and administrative organizations within VA and VHA.

A current legal issue under discussion in Headquarters involves the distribution of medical device manufacturers' Year 2000 compliance responses to organizations (both Federal and commercial) that are external to VA. The Project Office is also advising the VISNs to seek advice from and involve Regional Counsel in Year 2000 issues, to the extent necessary.